STATE PROJECT REFERENCE NO.

# PLAN FOR PROPOSED TRAFFIC CONTROL, MARKING & DELINEATION

# AVERY COUNTY

### ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-PROJECT SERVICES UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

## INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS, AND TEMPORARY PAVEMENT MARKING SCHEDULE
TCP-2	PROJECT NOTES
TCP-3	PHASING
TCP-4	PHASE I DETAIL
TCP-5	PHASE II DETAIL
TCP-6	PHASE III DETAIL
TCP-7	DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE WARNING SIGNS
PM-1	FINAL PAVEMENT MARKING SCHEDULE
PM-2	FINAL PAVEMENT MARKING PLAN

### **TEMPORARY** PAVEMENT MARKING SCHEDULE

SYMBOL DESCRIPTION PAY ITEM

PAY ITEM QUANTITY **BREAKDOWN** 

TOTAL QUANTITY

2,000 LF

2,000 LF

PAINT (4")

PAVEMENT MARKING LINES

YELLOW DOUBLE CENTER (2X)

WHITE EDGELINE (2X)

4,000 LF

### **LEGEND**

### **GENERAL**

DIRECTION OF TRAFFIC FLOW

NORTH ARROW

— PROPOSED PVMT. ----- EXIST. PVMT.

**WORK AREA** 

REMOVAL OF EXISTING PAVEMENT

### TRAFFIC CONTROL DEVICES

T TYPE I BARRICADE

TYPE III BARRICADE

CONE

SKINNY DRUM

FLASHING ARROW PANEL (TYPE C)

── STATIONARY SIGN

PORTABLE SIGN

STATIONARY OR PORTABLE SIGN

- CRASH CUSHION

CHANGEABLE MESSAGE SIGN

TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)

POLICE

**FLAGGER** 

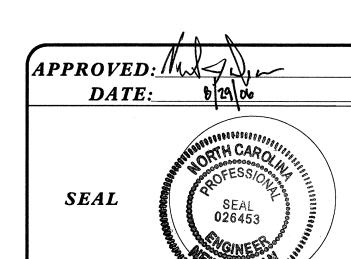
### PAVEMENT MARKINGS

CRYSTAL/CRYSTAL PAVEMENT MARKER

YELLOW/YELLOW PAVEMENT MARKER

CRYSTAL/RED PAVEMENT MARKER

PAVEMENT MARKING SYMBOLS



PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT

S. BOURNE, P.E. TRAFFIC CONTROL ENGINEER

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E. GROUNDWATER TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

TRAFFIC CONTROL PROJECT ENGINEER

Prepared in the

701 Corporate Center Drive, Suite #475; Raleigh ,NC 27607 Phone: (919) 854–6200 Fax: (919) 854–6259

NEIL J. DEAN, P.E. PROJECT ENGINEER

ADAPT THE TRAFFIC CONTROL PLANS, WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

#### TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL **EVENTS AS FOLLOWS:** 

ROAD NAME

SR 1321 (CURTIS CREEK ROAD)

WEDNESDAY FROM 6:00 PM TO 8:00 PM SUNDAYS FROM 12:01 AM TO 11:59 PM

DO NOT STOP TRAFFIC FOR MORE THAN 15 MINUTES AS FOLLOWS:

SR 1321 (CURTIS CREEK ROAD)

WATERLINE CROSSING REPLACEMENT

#### LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 40 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.
- H) DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY.
- I) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

#### PAVEMENT EDGE DROP OFF REQUIREMENTS

J) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS A DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

K) DO NOT EXCEED A DIFFERENCE OF 1.5 inches IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING \*UNEVEN LANES\* SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF ONCE EVERY MILE THROUGHOUT THE UNEVEN AREA.

#### TRAFFIC PATTERN ALTERATIONS

L) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

## PROJECT NOTES

PROJ. REFERENCE NO. SHEET NO. B-3406 TCP-2

#### SIGNING

M) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 100 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE WARNING SIGNS, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE DEPARTMENT.

- N) PROVIDE PERMANENT SIGNING
- O) PROVIDE DETOUR SIGNING WITHIN AND OFF THE PROJECT LIMITS.
- P) THE CONTRACTOR WILL COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION
- Q) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

#### TRAFFIC CONTROL DEVICES

- R) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT.
- S) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY. STAGGER OR OVERLAP BARRICADES TO ALLOW FOR INGRESS OR EGRESS.
- T) PLACE SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF THE TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC. THESE DRUMS SHALL BE IN ADDITION TO CHANNELIZING DEVICES.

#### PAVEMENT MARKINGS AND MARKERS

U) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

MARKING ROAD NAME MARKER SR 1321 (CURTIS CREEK RD) PAINT

V) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

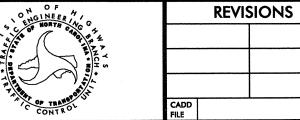
ROAD NAME MARKING MARKER SR 1321 (CURTIS CREEK RD) PAINT NONE

- W) PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.
- X) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- Y) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.
- Z) PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE (3) MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

APPROVED: MULTIN DATE: 10 27 6 SEAL 026453

PROJECT NOTES

NONE DATE: AUGUST, 2006 DWG. BY: DESIGN BY: BRP REVIEWED BY: NJD



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# **PHASING**

NOTE: IN ALL STEPS AND IN ALL PHASES, RETURN TRAFFIC TO TWO LANE-TWO WAY OPERATION BY THE END OF EACH WORKDAY

### PHASE I

PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, INSTALL WORK ZONE ADVANCED WARNING SIGNS AS SHOWN IN THE STANDARD DETAILS, TCP-7.

- STEP 1 MAINTAIN THE EXISTING TRAFFIC PATTERN ON CURTIS CREEK ROAD (-L-) AS SHOWN ON TCP-4. THIS INCLUDES MAINTAINING INGRESS AND EGRESS TO THE PRIVATE ENTRANCES ALONG CURTIS CREEK RD (-L-) AT ALL TIMES.
- STEP 2 CONSTRUCT THE PROPOSED DETOUR AWAY FROM TRAFFIC FROM STA 11+15 TO STA 16+10, INCLUDING THE CONSTRUCTION OF THE TEMPORARY BRIDGE OVER CURTIS CREEK. PLACE TEMPORARY MARKINGS (PAINT) ON THE NEWLY CONSTRUCTED DETOUR AS SHOWN ON TCP-5.

WHEN THE CONSTRUCTION IS ADJACENT TO THE EXISTING EASTBOUND TRAVEL LANE OF CURTIS CREEK RD (-L-), USE RDWY STD 1101.02 SHT 1 OF 9 FOR LANE CLOSURES. REMOVE THE EASTBOUND LANE CLOSURE AND RETURN TRAFFIC TO THE EXISTING PATTERN BY THE END OF EACH WORKDAY.

STEP 3 USING RDWY STD 1101.02 SHT 1 OF 9 FOR LANE CLOSURES AS NEEDED, SHIFT TRAFFIC FROM EXISTING CURTIS CREEK RD (-L-) TO THE DETOUR AS FOLLOWS:

WORKING IN A CONTINUOUS MANNER, STOP EASTBOUND TRAFFIC AND RELOCATE TRAFFIC CONTROL DEVICES AS NEEDED AT EITHER END OF DETOUR TIE-IN LOCATIONS. SHIFT THE EASTBOUND TRAFFIC ONTO THE DETOUR. PLACE TEMPORARY PAVEMENT MARKINGS (PAINT) AT THE TIE-IN LOCATIONS AS NEEDED AND OBLITERATE ANY CONFLICTING PAVEMENT MARKINGS. SHIFT THE WESTBOUND TRAFFIC ONTO THE FINAL DETOUR PATTERN.

USING RDWY STD DWG 1101.03 SHEET 3 OF 9 FOR ROAD CLOSURES, INSTALL TRAFFIC CONTROL DEVICES TO CLOSE EXISTING CURTIS CREEK ROAD (-L-).

### PHASE II

STEP 1 MAINTAIN TRAFFIC ON THE CURTIS CREEK RD DETOUR (-DETOUR-)
AND MAINTAIN INGRESS AND EGRESS TO THE PRIVATE DRIVES ALONG
CURTIS CREEK RD (-L-).

CONSTRUCT THE PROPOSED CURTIS CREEK RD (-L-) AWAY FROM TRAFFIC UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE AS SHOWN ON TCP-5. THIS INCLUDES THE CONSTRUCTION OF THE PROPOSED BRIDGE STRUCTURE OVER CURTIS CREEK AND THE INSTALLATION OF THE PROPOSED GUARDRAIL AND IMPACT ATTENUATORS.

WHEN THE CONSTRUCTION IS ADJACENT TO THE WESTBOUND TRAVEL LANE OF THE DETOUR, USE RDWY STD 1101.02 SHT 1 OF 9 FOR LANE CLOSURES. REMOVE THE LANE CLOSURE AND RETURN TO THE EXISTING TRAFFIC PATTERN BY THE END OF EACH WORKDAY.

STEP 2 PLACE THE FINAL PAVEMENT MARKINGS (PAINT)
ON THE NEWLY CONSTRUCTED ROADWAY AND
BRIDGE FOR THE FINAL TRAFFIC PATTERN.

### PHASE III

COMPLETE CONSTRUCTION OF CURTIS CREEK RD (-L-) PREVIOUSLY BEGUN.

STEP 1 USING RDWY STD 1101.02 SHT 1 OF 9 FOR LANE CLOSURES AS NEEDED, SHIFT TRAFFIC FROM THE CURTIS CREEK RD DETOUR TO THE PROPOSED CURTIS CREEK RD (-L-) AS FOLLOWS:

WORKING IN A CONTINUOUS MANNER, STOP WESTBOUND TRAFFIC AND RELOCATE TRAFFIC CONTROL DEVICES AS NEEDED AT EITHER END OF DETOUR TIE-IN LOCATIONS. SHIFT THE WESTBOUND TRAFFIC ONTO THE NEWLY CONSTRUCTED ROADWAY. PLACE PAVEMENT MARKINGS (PAINT) AT THE TIE-IN LOCATIONS AS NEEDED. OBLITERATE ANY CONFLICTING PAVEMENT MARKINGS. SHIFT THE EASTBOUND TRAFFIC ONTO THE NEW ROADWAY IN THE FINAL PATTERN.

STEP 2 OPEN CURTIS CREEK RD (-L-) TO TRAFFIC IN THE FINAL TRAFFIC PATTERN. OBLITERATE THE CURTIS CREEK RD DETOUR (-DETOUR-).

APPROVED: DATE: B 19 00

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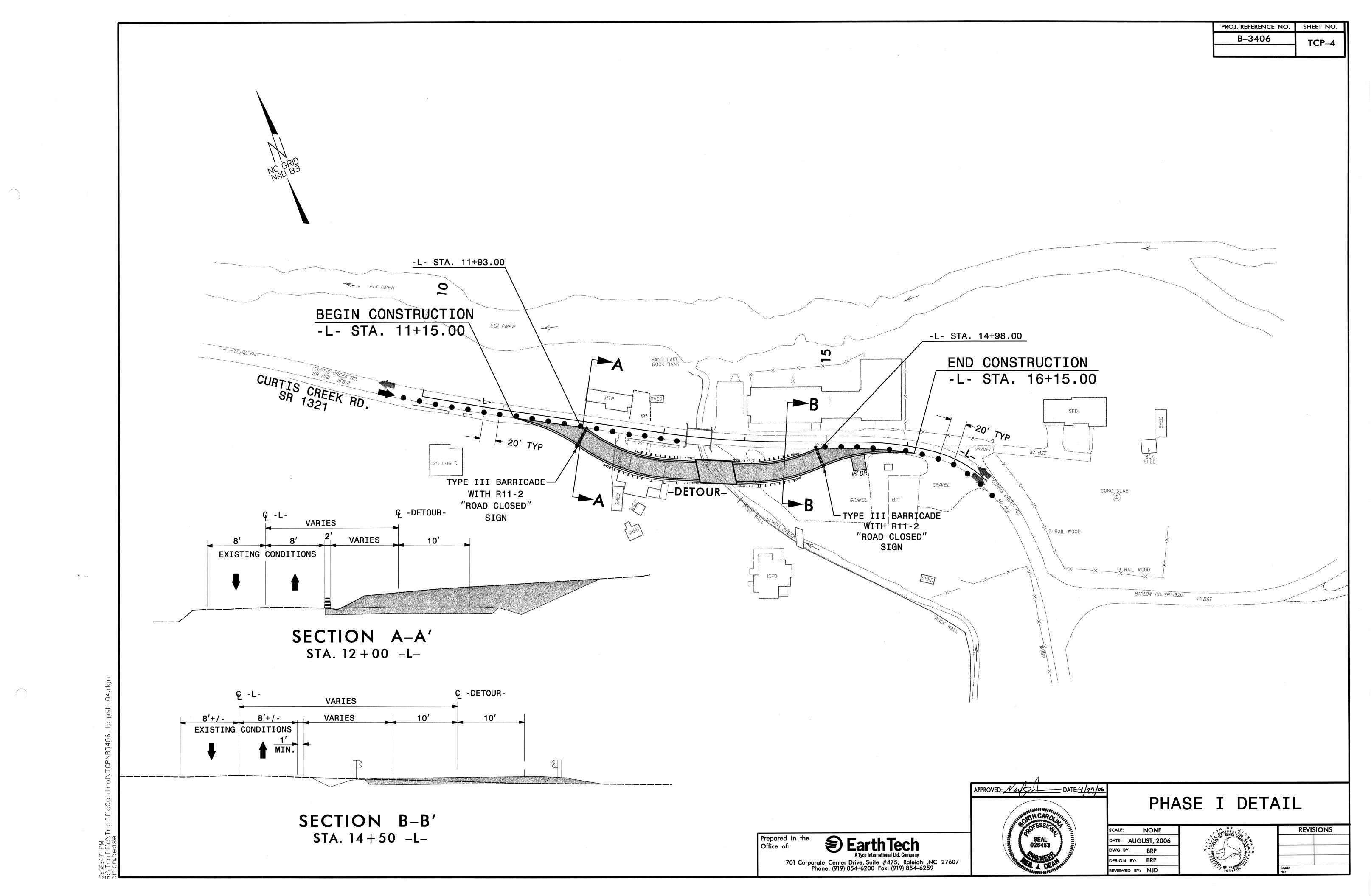
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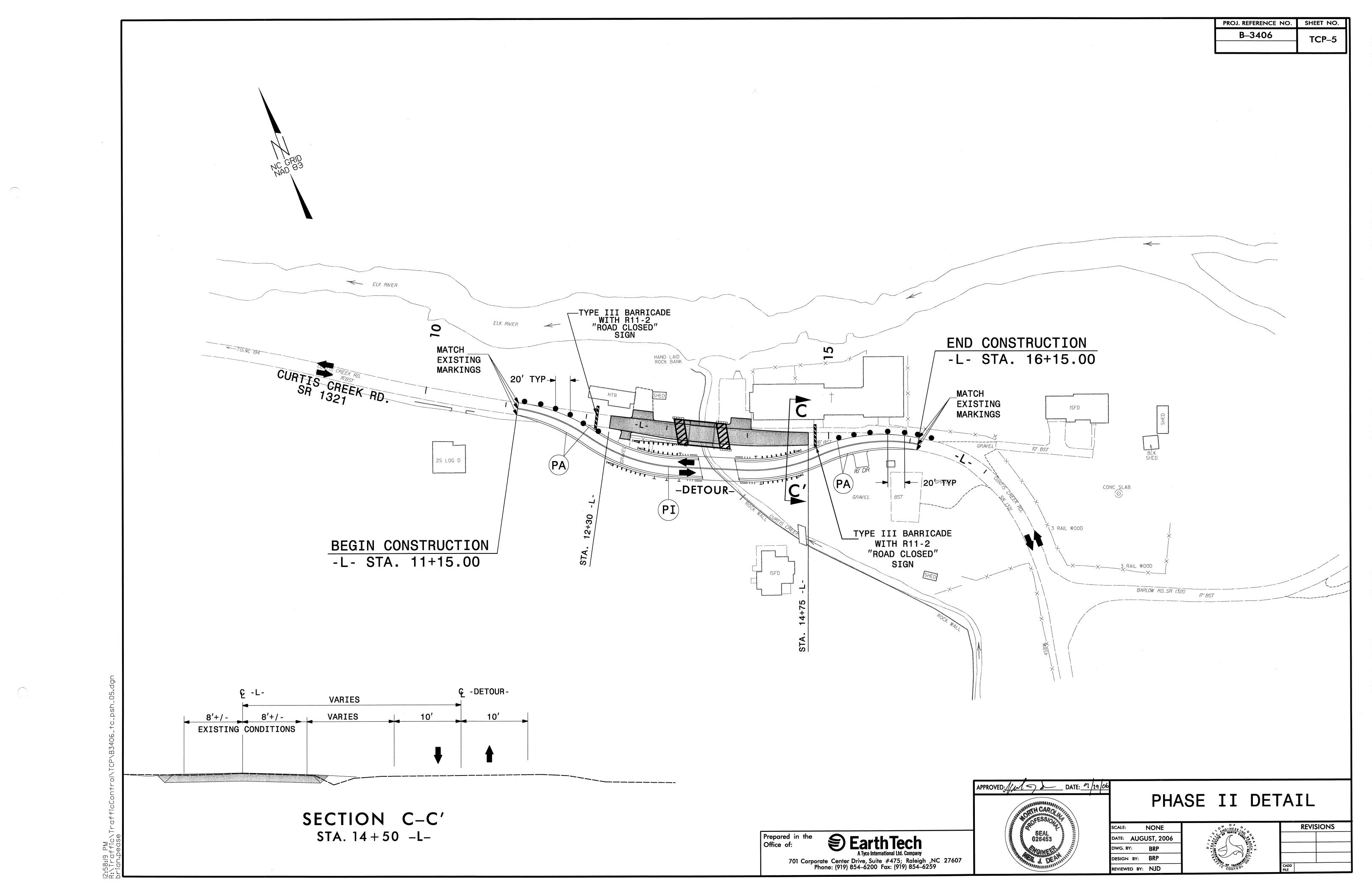
DATE: AUGUST, 2006
DWG. BY: BRP
DESIGN BY: BRP

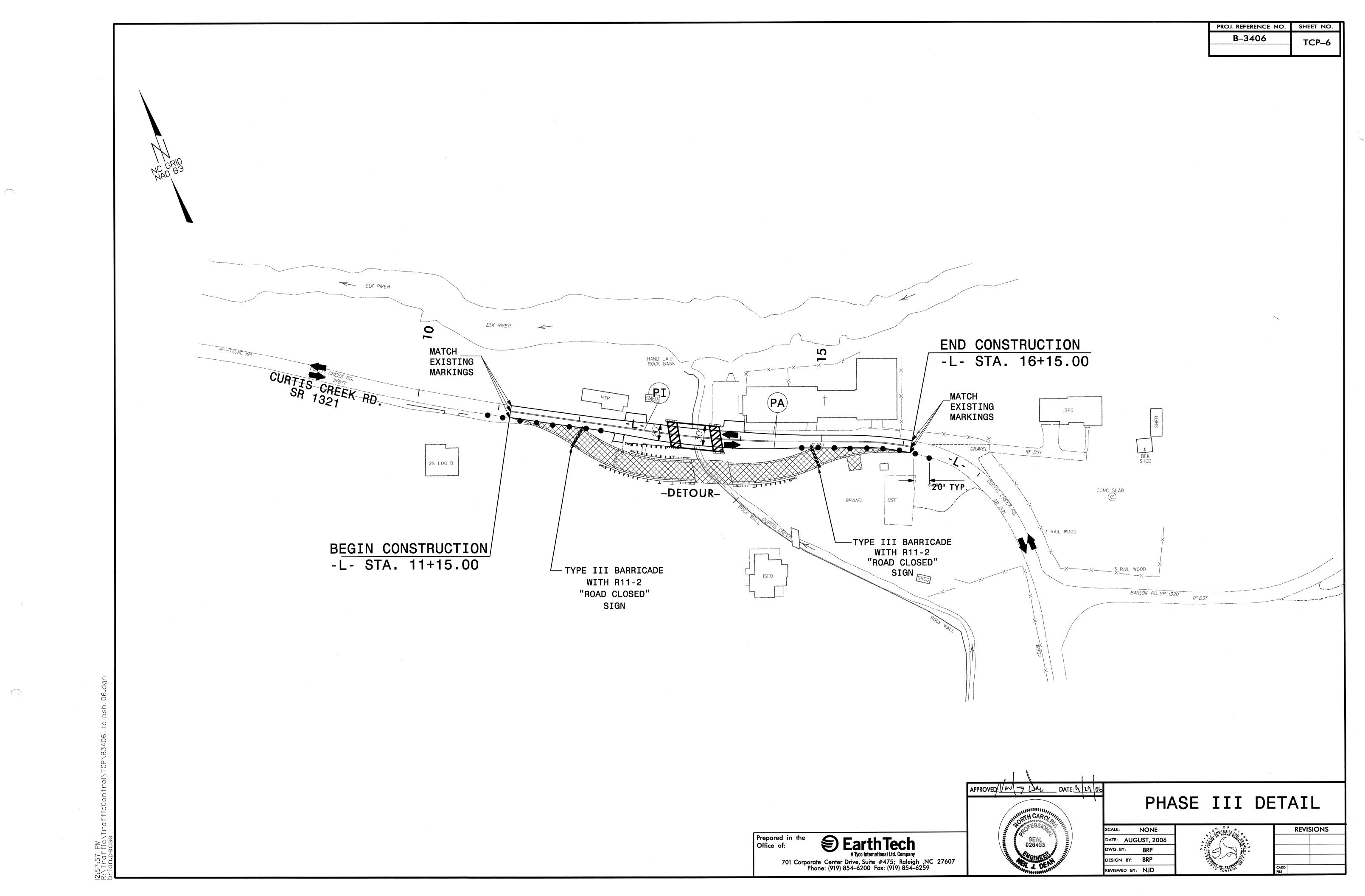


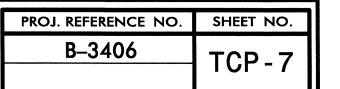
**REVISIONS** 

TO BROWN MARKET









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RALEIGH



MINIMUM

SIGN SPACING

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500'

1000'

POSTED SPEED LIMIT

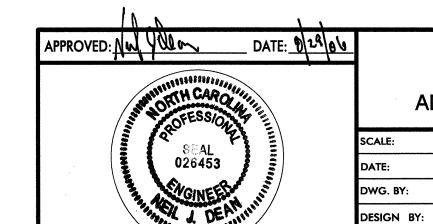
(M.P.H.)

≤ 50

≥ 55

HIGHWAYS 0F DIVISION STATE

SHEET 1 OF 1



**LEGEND** 

DIRECTION OF TRAFFIC FLOW

REVIEWED BY:

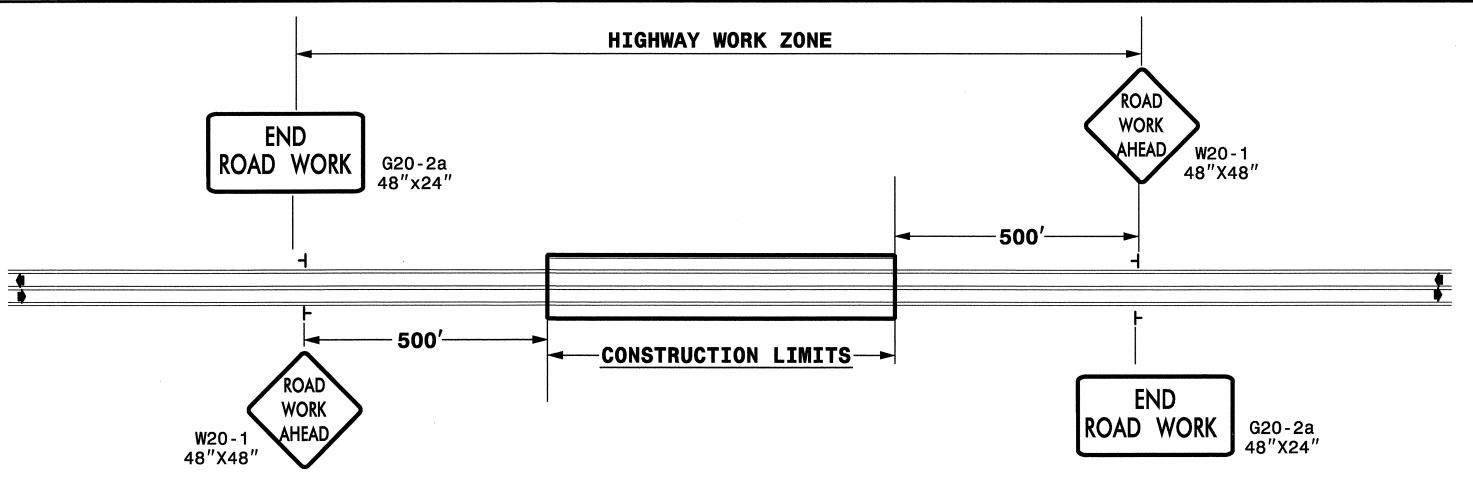
├ STATIONARY SIGN

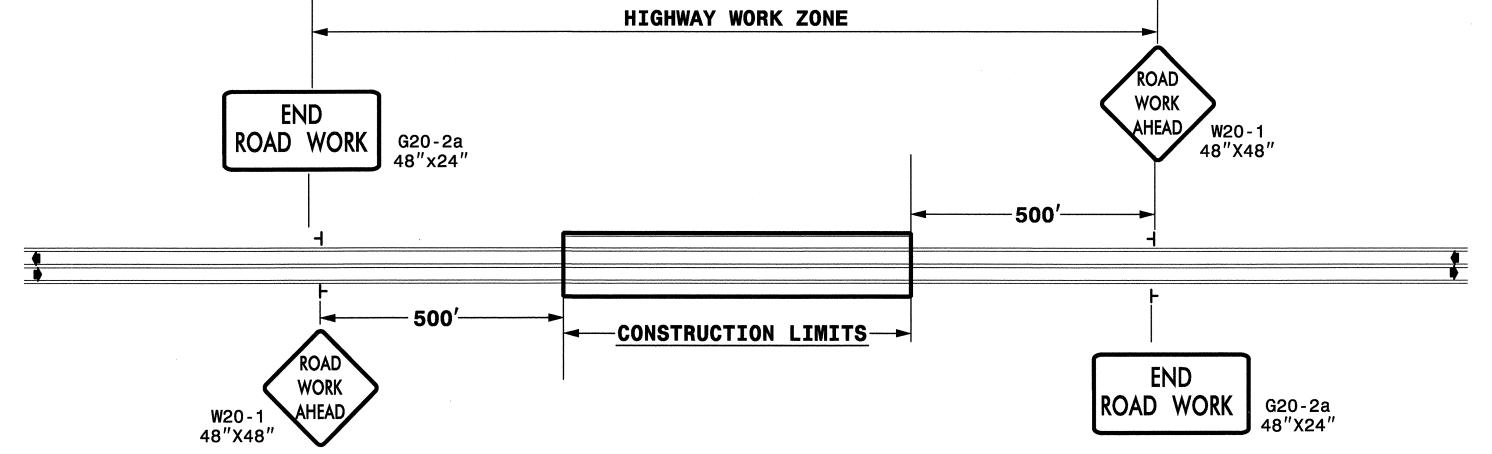
DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS

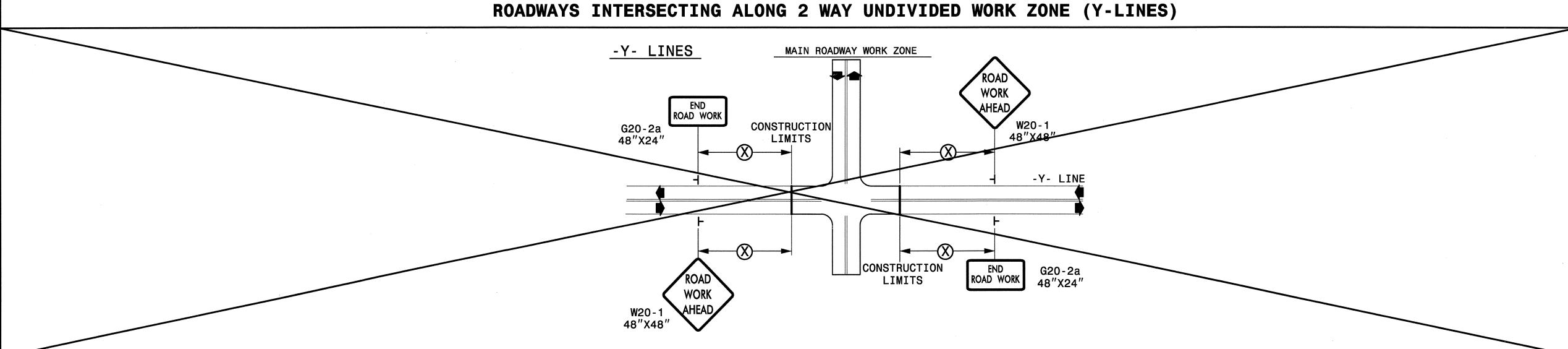
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**REVISIONS** 10/01 7–98 10–98 03/04 01/01 11/04

### TWO-WAY UNDIVIDED \*\* (L-LINES)







### **GENERAL NOTES**

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- \*\* TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.